

TELEDYNE ANALYTICAL INSTRUMENTS

Retractable probes

INSERTION SYSTEM

Teledyne has packaged their process probes within a Welker Insertion Device. This device is designed for use in applications where it is desirable to insert and retract a probe into a process. The insertion device, along with a manual hydraulic pump, will allow the operator to control the movement of the probe in and out of the process safely through the use of three control valves on the oil reservoir.

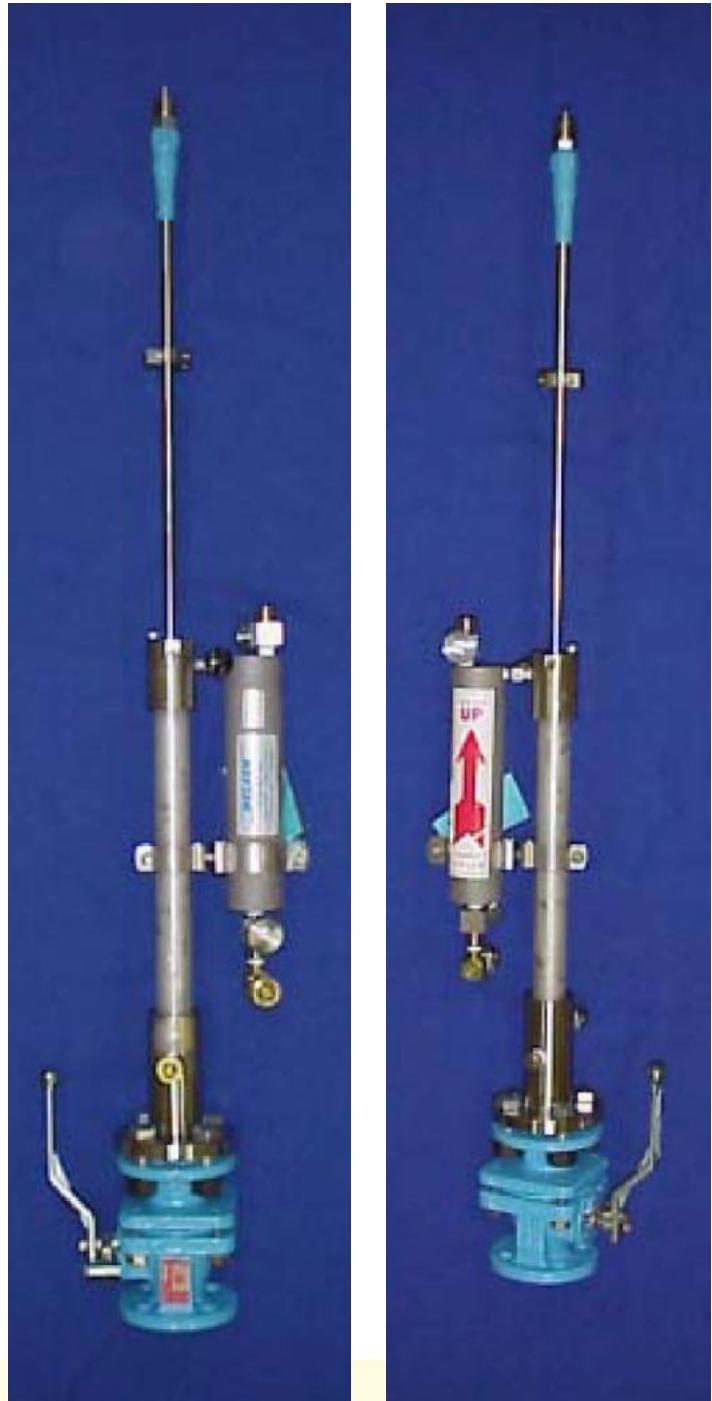
The insertion device is equipped with a 150 ANSI pound Raised Face Flange for mounting with a 1" TFE Fully lined ball valve. These items are to be mounted in an upright position. The ball valve will allow the end user to isolate the process from the insertion device once the probe is fully retracted.

An Enerpac P-80 Hydraulic pump is being equipped with this system. The pump has the capability of inserting and extracting the probe into a process. This pump is being furnished with two hydraulic hoses with built-in shut off valves that transfer hydraulic oil to and from the insertion device.

One of the hoses is marked with orange tape and the other is marked with blue tape. The orange taped hose carries the high pressure oil to the insertion device while the the blue taped hose returns low-pressure oil to the pump. The pump will re-circulate the oil within the system.

The insertion system is provided with the ball valve, probe, and insertion device

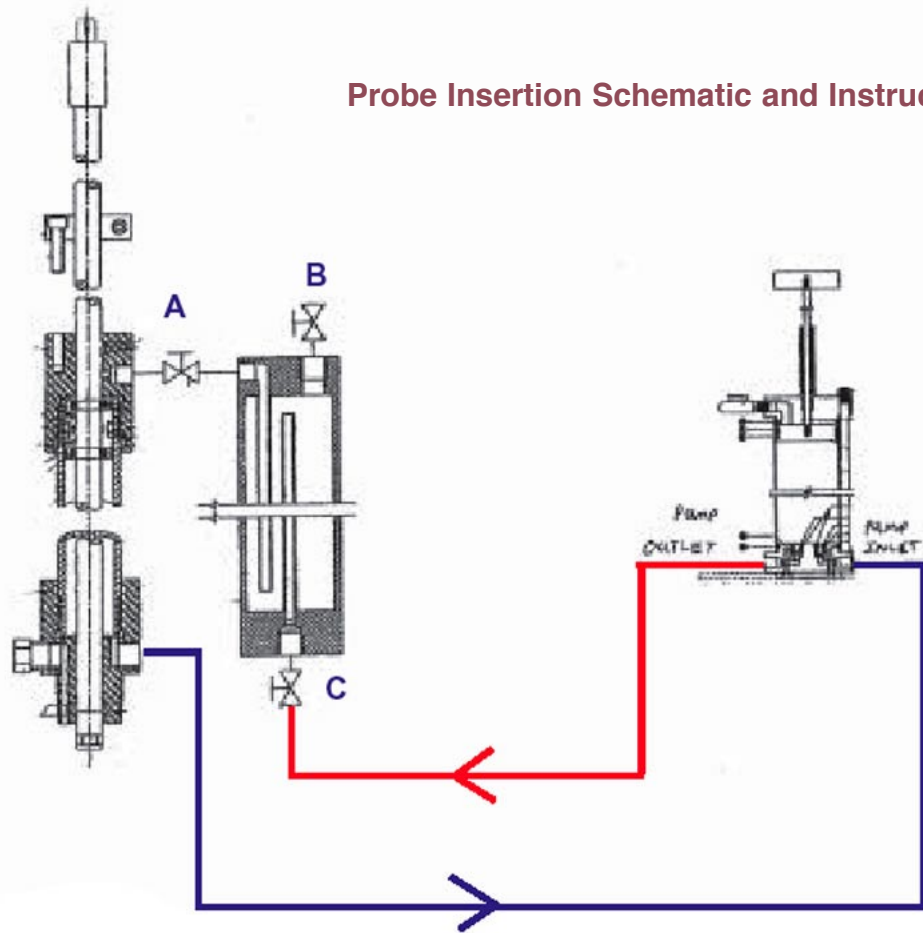
already assembled. The ball valve has been attached loosely to the system. The integrity of the TFE seal on the ball valve is still intact.



View of Insertion System

Retractable probes

Probe Insertion Schematic and Instructions



To insert the probe into the process:

1. Make sure the probe is fully retracted.
2. Connect the orange taped hose to valve C.
3. Connect the blue taped hose to the base of the insertion device.
4. Open valve A.
5. Open valve C.
6. Open TFE lined ball valve.
7. Remove locking set screw on insertion device.
8. Start stoking the pump slowly.

Note: If the pump does not immediately start moving the probe, there must be entrained air in the system. To remove the air, slowly open valve B. Any compressed air will exit the system. Then close valve B.

9. It will take approximately 4 strokes of the pump for full travel of the probe.
10. Once locking collar on probe has reached itop of the insertion device, tighten set screw to insertion device. This will lock the probe in place.

The pump can be removed at this point. Please note that there will be some residual oil in quick disconnects left behind.



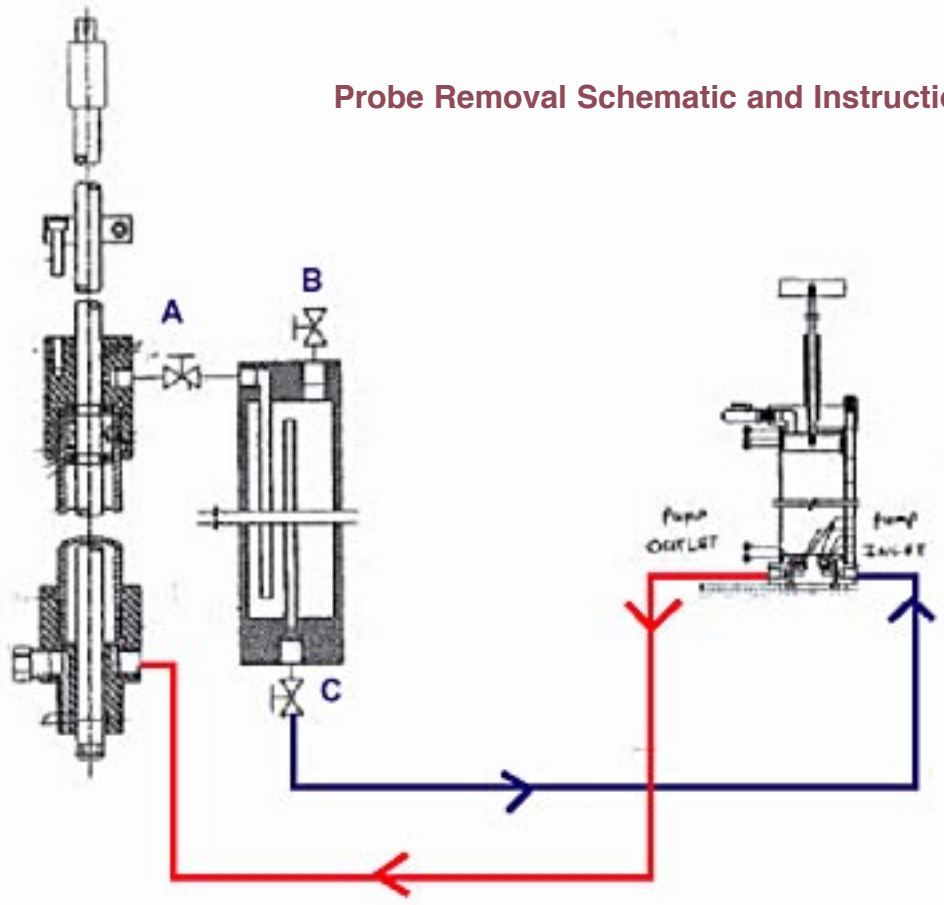
Retractable probes

Probe Insertion



Retractable probes

Probe Removal Schematic and Instructions



To remove the probe into the process:

1. Connect the orange taped hose to the base of the insertion device
2. Connect the blue taped hose to valve C.
3. Open valve A.
4. Open valve C.
- 5 Remove locking set screw on insertion device.
6. Start stoking the pump slowly.

Note: If the pump does not immediately start moving the pump, there must be air in the system. To remove the air, slowly open valve B. Any compressed air will exit the system.

7. It will take approximately 4 strokes of the pump for full retraction of the probe. (Probe will travel approximately 23cm.)
8. Before closing TFE lined ball valve, make sure probe is full retracted and then gently close valve.

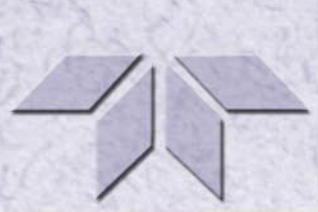
The pump can be removed at this point. Please note that there will be some residual oil in quick disconnects that will be left behind.



Retractable probes

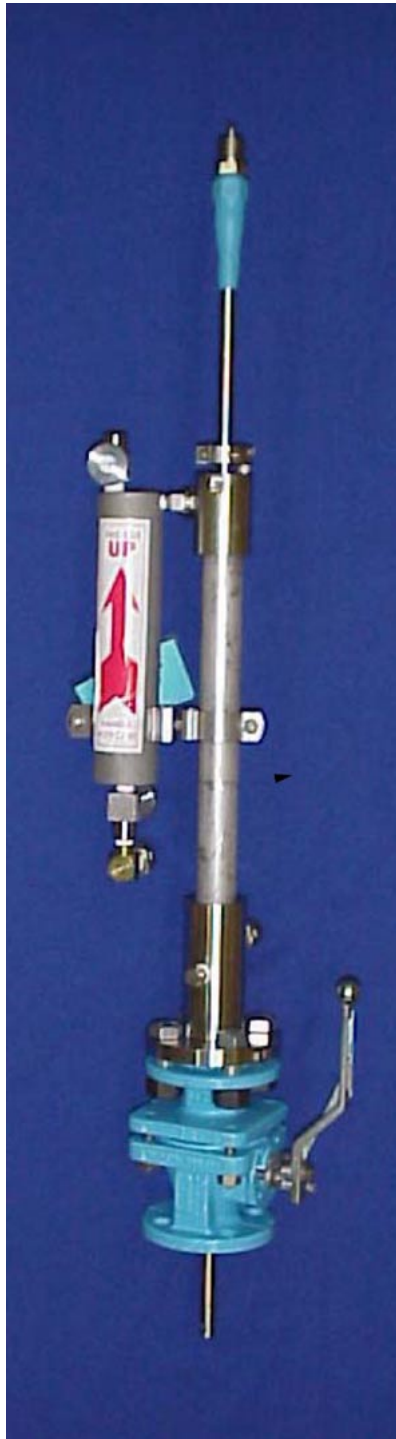
Probe Removal



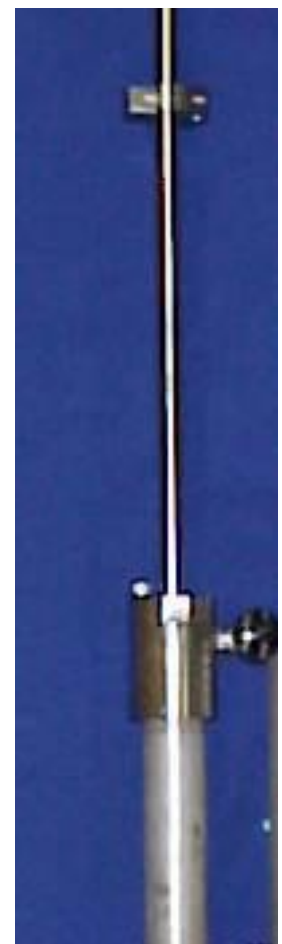


Retractable probes

Process probe fully inserted through ball valve



Locking collar



Locking set screw



Retractable probes



1" TFE lined ball valve

Probe tip
10 mm path
length

Length
of probe
exposed:
8.25 cm



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Warranty

Instrument is warranted for 1 year against defects in material or workmanship. NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

